

Calculations with Scientific Notation

Multiplication and Division:

$$\frac{6.6 \times 10^{-8}}{3.3 \times 10^{-4}} = 2 \times 10^{-4}$$

subtract: $-8 - (-4) = -4$

$$(2.5 \times 10^{-6}) \times (3.0 \times 10^{-7}) = 7.5 \times 10^{-13}$$

add

Addition & Subtraction:

$$(2.67 \times 10^{-3}) - (9.5 \times 10^{-4}) =$$

change to 10^{-4}

have to match

$$(26.7 \times 10^{-4}) - (9.5 \times 10^{-4})$$

$$= 17.2 \times 10^{-4}$$

$$= 1.72 \times 10^{-3}$$

$$\begin{array}{r} 0.00267 \\ - 0.00095 \\ \hline \end{array}$$

$$\begin{array}{r} 1250 \\ 4.25 \\ 0.019 \\ 416 \\ 22 \\ \hline \end{array}$$

Homework:

1. a) $4.5 \times 10^7 + 6.45 \times 10^7$
b) $5.4 \times 10^7 + 7.8 \times 10^6$
c) $7.8 \times 10^{-6} - 8.4 \times 10^{-7}$
d) $2.3 \times 10^4 - 4.2 \times 10^3$
e) $6.7 \times 10^{-8} + 8.2 \times 10^{-7}$

2. a) $(4.5 \times 10^2)(2.3 \times 10^{-4})$
b) $(2.0 \times 10^6)(3.5 \times 10^{-9})$
c) $(1.2 \times 10^7)(1.2 \times 10^4)$
d) $\frac{6.0 \times 10^7}{1.5 \times 10^2}$
e) $\frac{7.2 \times 10^{-4}}{1.2 \times 10^{-4}}$
f) $\frac{(5.5 \times 10^{-5})(6.0 \times 10^4)}{(2.1 \times 10^4)}$